

# Notice of Allowability

Application No.

10/099,609

Examiner

Christine Sung

Applicant(s)

SHIFFLETT ET AL.

Art Unit

2878

AW

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/15/2002.
2. ☒ The allowed claim(s) is/are 1-44.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 3/02
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Birdwell on March 4, 2004.

The application has been amended as follows:

Claim 2 now reads:

The apparatus of claim 1, wherein said predetermined wavelength of the ultraviolet light is about .23 microns.

Claim 8 now reads:

The apparatus of claim 1, wherein said predetermined wavelength of ultraviolet light is about .23 microns and said predetermined wavelength of infrared light is about 1.6 microns.

Claim 16 now reads:

The method of claim 10, where in the predetermined wavelength of light is about .23 microns and said predetermined wavelength of infrared light is about 1.6 microns.

Claim 27 now reads:

The apparatus of claim 26, wherein said predetermined wavelength of the ultraviolet light is substantially about .23 microns.

Claim 32 now reads:

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The apparatus of claim 26, wherein said predetermined wavelength of ultraviolet light is about .23 microns and said predetermined wavelength of infrared light is about 1. microns.

Claim 41 no reads:

The method of claim 36 wherein said predetermined wavelength of ultraviolet light is about .23 microns and said predetermined wavelength of infrared light is about 1.6 microns.

The above amendments were necessary to clarify the claims.

***Allowable Subject Matter***

2. Claims 1-44 are allowed.
3. The following is an examiner's statement of reasons for allowance: Regarding claims 1-44, none of the prior art of record specifically discloses a exhaust content apparatus or method that includes a processor that determines the content of the exhaust plume by determining the ratio of the density of particles in the exhaust with a diameter greater than the wavelength of the UV light to the density of the carbon dioxide in the exhaust. Although there are many references that disclose similar gas and/or exhaust content detection systems none of the prior art of record specifically discloses obtaining the particulate content by determining the ratio disclosed above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. US Patent 5,877,862- this reference discloses a processor used with an exhaust monitor that processes intensities to provide concentrations of carbon dioxide and the rate of emission of a component by a vehicle. However it does not include determining the density of particles with a diameter greater than the wavelength of the UV radiation.
- b. US Patent 5,719,396- this reference discloses an exhaust monitor that processes the transmittance of a given radiation through the exhaust to produce emission concentrations.
- c. US Patent 3,788,742- this reference discloses a gas distribution system that correlates a ratio of the densities of the gas molecules detected, however, it does not include the specific ratio requirements disclosed in the instant application and further does not employ the use of a plurality of radiation sources.
- d. US Patent 6,061,141- this reference discloses a gas detector that compares signals obtained from various sensor to determine the presence or absence of a vapor.
- e. US Pre Grant Publication 2002/0010554- this reference discloses an exhaust monitor that includes a processor that calculates a ration of the exhaust components but does not include determining the density of particles that have a diameter greater than the wavelength of UV light.
- f. US Patent 6,671,630- this references discloses an exhaust monitor that processes a ratio of the absorption of vehicle exhaust components but does not include determining the density of particles that have a diameter greater than the wavelength of UV light.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Sung whose telephone number is 571-272-2448. The examiner can normally be reached on Monday- Thursday 7-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christine Sung  
Examiner  
Art Unit 2878

CS

  
**DAVID PORTA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**